

# MASTER'S THESIS

## Trust through transparency: will it get you what you want?

The role of policy transparency towards disclosure of students' personal information in Higher Education Institutions

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**Award date:**  
2020

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# Trust through transparency: will it get you what you want?

*The role of policy transparency towards disclosure of students'  
personal information in Higher Education Institutions*

BY

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*A thesis in partial fulfilment of the requirements for the degree*

*'Master of Science in Business Process Management & IT'*

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**Date:** 17 August 2020

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**Faculty:** Faculty of Management, Science & Technology

**Programme:** Master Business Process Management & IT (Data track)

**Course Code:** IM9806

**Title (NL):** **Vertrouwen door transparantie: krijg je erdoor wat je wilt?** – De rol van  
beleidstransparantie in ontsluiting van persoonlijke informatie van studenten in Hoger  
Onderwijs Instellingen

## 1. ABSTRACT

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Higher Education Institutions (HEI's) are trying to keep up with the private sector in leveraging predictive analytics to inform their educational processes, but where personal information is involved privacy-related questions arise. HEI administrators who deal with information management need to be aware of how their policy-decisions influence students' willingness to disclose such personal information. This study aims to provide more insight into that relationship by examining the relationships between students' perceptions on policy (i.e. transparency thereof) and its interplay with other predictive factors towards students' disclosure intentions. To that end, students from a Dutch HEI were questioned on their own information literacy and general privacy disposition, as well as their overall trust in their institution. A Partial Least Squares Structural Equation Modelling approach was used to shed light on the influence those factors have on the relationship between students' perceptions on transparency and their disclosure intentions. The results may be of note to HEI administrators who are involved with analytics implementations leveraging student data or other privacy-related implementations, and who need more insight into the possible consequences of their policy decisions.

**Key terms:**

Transparency, Privacy, Information Literacy, Trust, Privacy Concern, Disclosure, Policy

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## 4. SUMMARY

This thesis examines how both the perceived transparency of (privacy) policy in a Higher Education Institution (HEI) and the information literacy of its students – through their trust in the institution and their general privacy concerns – impact students' willingness to disclose personal data to the HEI.

The following six hypotheses were defined for this study:

- **H<sub>1</sub>**: Institutional trust negatively affects privacy concern.
- **H<sub>2</sub>**: Privacy concern negatively affects the intention to allow the organisation from harvesting and making use of their personal data.
- **H<sub>3</sub>**: Institutional trust positively affects the intention to allow the organisation to harvest and make use of their personal data.
- **H<sub>4</sub>**: Perceived transparency positively affects institutional trust.
- **H<sub>5</sub>**: Information literacy positively affects institutional trust.
- **H<sub>6</sub>**: Information literacy positively moderates the impact of perceived transparency on institutional trust.

The model used to study these hypotheses consists of five latent variables – information literacy (IT), perceived transparency (PT), institutional trust (IT), privacy concerns (PC), and disclosure intentions (DI) – with six relationships between them, which is shown in Figure 1.

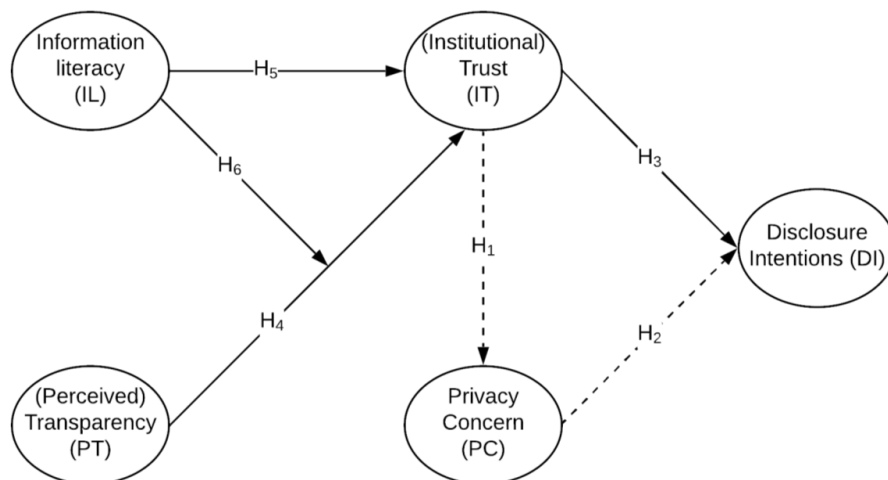


Figure 1: Research model including hypothesised relationships

A questionnaire with 42 measuring items (see Appendix 4: Questionnaire) was compiled based on five pre-existing, readily validated scales to measure the five structural variables in the research model. The questionnaire was spread among students of a Dutch university of applied sciences during March and April of 2020 and garnered 71 (completed) responses.

To analyse the response data a structural equation modelling (SEM) approach was used, specifically using the Partial Least Squares (PLS-SEM) method with bootstrapping using 4.999 subsamples. Before analysing the structural model results, the measurement model was assessed to ensure the data fulfilled reliability and validity conditions. After this, 3 items were removed before starting analysis of the structural model.

The results of the analysis of the structural model supported three of the hypotheses –  $H_2$ ,  $H_3$ , and  $H_4$  – while partially supporting a fourth –  $H_6$  – with the remaining two –  $H_1$  and  $H_5$  – lacking support ( $H_1$  did produce a significant effect in the opposite direction). The results showed the structural model is able to predict 14.5% of variance in disclosure intentions (i.e.  $R^2 = 0.145$ ). The hypothesised relationships, the relevant path coefficients, and their effect sizes can be seen in Table 1.

*Table 1: Path coefficients ( $\beta$ ) and effect sizes ( $f^2$ ) per hypothesised relationship*

Effect	Hyp.	$\beta$	Cohen's $f^2$	$f^2$ ratings
IT → PC	$H_1$	0.1955*	0.0397	Small
PC → DI	$H_2$	-0.3092**	0.1076	Small
IT → DI	$H_3$	0.2917**	0.0957	Small
PT → IT	$H_4$	0.5311***	0.4038	Large
IL → IT	$H_5$	0.0566	0.0044	-
Mod → IT	$H_6$	-0.1708 <sup>o</sup>	0.0425	Small

❖ \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$  (two-tailed)

❖ <sup>o</sup> $P < 0.05$  (one-tailed)

❖ Unmarked means not significant

With limited predictive power, and several relationships not supported, the model can be deemed at least incomplete and probably misspecified. However, it is safe to conclude that transparency has a large significant relation with trust in an organisation, and that both trust and privacy concern have – as was expected beforehand – a clear influence on the behavioural (disclosure) intentions of an individual. While information literacy is not supported as a factor in the research model, the partial significance of the moderating effect and the exploration of alternative models suggest it does play a role in the process. A relatively small sample size, lack of multiple independent samples, and the limited contextual/situational factors in the research design limit the generalisability and overall relevance of this study.



These results could contribute to decision-making for HEI administrators who are implementing policy-enhancements which relate to personal information of their students. Multiple sensible avenues for further research can be considered, primarily those which focus on more contextual/situational factors with alternative models which allow for contextual effects like transactional models (e.g. privacy calculus) or those modelling decision-making and goal-pursuit (e.g. Regulatory Focus Theory).

## 5. INTRODUCTION

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Predictive analytics has become a driving force in many sectors – public and private alike – (Siegel, 2016). Because of this Higher Education Institutions (HEI's) see potential in leveraging techniques similar to those seen in commercial contexts. In HEI's the use of (predictive) analytics is primarily aimed at 'Learning Analytics', which aims to contribute to the primary process of education by providing insight from tracking student (learning) behaviours. An expert study by Scheffel, Drachsler, Stoyanov, & Specht (2014) showed that 'privacy of students' is considered the single most important quality indicator for Learning Analytics, which makes it surprising that relatively little research has been performed linking privacy to Learning Analytics.

To leverage predictive analytics HEI's should foster an environment in which subjects are comfortable disclosing personal information, for which they need to be aware of the factors influencing disclosure. Because of the inherent value which insight into student behaviour can provide, HEI's would do well to cater to the wishes of their students in terms of privacy measures and foster a transparent and safe information culture, lest students decide to 'opt out' of allowing such 'tracking and harvesting' practices entirely. Such retaliatory behaviours would hinder HEI administrators in their attempts to leverage predictive analytics in their institutions.

The salient factors in such disclosure decisions can be elements of organisational privacy policies themselves like (e.g.) the (perceived) control an organisation leaves with the subject (Martin, Borah, & Palmatier, 2017) or individual factors like the (lack of) concern for privacy a subject has built up from prior experiences (Bansal & Zahedi, 2015). Another relevant factor in disclosure decisions – or in any other dealings with organisations in general – is the measure of trust an individual has in the organisation, which has been shown to lead to less cautious behaviour (Miltgen & Smith, 2015).

Organisations typically are obligated to attain a certain level of permission from subjects to use their personal data (Milne & Rohm, 2000), but the nature of such permissions differs depending on the regulatory context (e.g. EU's GDPR or US' Privacy Shield). However, how such permission is attained, how gathered data will be used, and how much control it leaves with the individual is often unclear or opaquely communicated, which can lead to reputation damage and mistrust between individuals and organisations.

### 5.1. RESEARCH OBJECTIVES

This study aims to provide more clarity on the effect that students' privacy/policy-related perceptions in HEI's have on their willingness to disclose personal information.

### 5.1.1. PRIMARY RESEARCH QUESTION

How do perceptions of privacy-policy transparency influence an individual's decision to either allow or disallow an organisation to harvest and make use of their personal data for Learning Analytics purposes?

### 5.1.2. SUB-QUESTIONS

- Which factors affect how people make decisions towards personal information disclosure?
- Which organisational/policy factors affect an individual's disclosure-related decision-making?
- How much do personal predispositions regarding privacy influence disclosure-related decision-making?
- How do personal circumstances/characteristics influence an individual's disclosure-related decision-making?

## 5.2. RELEVANCE

In HEI's, dilemmas related to accountability and morality become relevant in policy debates where they inevitably play into considerations which contrast ability/legality (i.e. 'Can we do that?') with ethics and morality ('Should we do that?'). The desirability of policies has to not only be weighed against the morality of implementing the measure (i.e. the ethical perspective), but also the expected results of the decision (i.e. the business perspective). Such operant results could potentially include retaliatory behaviour, where an involved individual can (e.g.) become uncooperative/disengaged from the organisation.

A benefit for HEI's can be that research on this matter could provide more insights into the manner in which policies are drawn up and communicated or at least how they 'come to be', which is often deserving of attention (Ermakova et al., 2014). Results from this study could provide more insights in how to maintain a healthy relationship between policymakers in education and students who are inherently dependent on them.

## 5.3. READING GUIDE

In the next section – Theoretical Framework – a review of the existing body of knowledge on the topic-areas of relevance is presented, working towards a more narrowly defined framework within which the research questions were examined. In the next section – **Fout! Verwijzingsbron niet gevonden.** – the manner in which the research was conducted is elaborated upon including a detailed explanation of the measurement instruments which were used. In the 'Results' section the results of the research are presented, which feeds into the final section where those results including the limitations of the study are discussed, after which some final recommendations for academia and practice are provided.

## 6. THEORETICAL FRAMEWORK

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### 6.1. ANALYTICS AND PRIVACY

Data-driven Learning Analytics heavily depends on the availability of personal data for proper application and personalization (Kobsa, 2007) which necessitates openness (i.e. disclosure) from the individual learner (Drachsler et al., 2015). Because of the inherent reliance on large-scale data collection, privacy as an issue is considered of paramount importance by Learning Analytics researchers (Scheffel et al., 2014).

### 6.2. INFORMATION PRIVACY

Privacy is typically described as a concept signifying an entity's control over information regarding itself (Westin, 1968): which could be either individuals controlling personal information or organisations controlling information about their operations (Smith et al., 1996). The concept of privacy is vague, as it is assumed to be a rather arbitrary concept depending on situational factors as well as other influences like social, cultural and psychological factors (e.g. Bélanger & Crossler, 2011; Li, Sarathy, & Xu, 2010). Clarke (1999) distinguishes 3 dimensions of privacy: (1) privacy of a person, (2) personal behaviour privacy, and (3) personal information privacy, with the latter a merger of personal communication and personal data (Crossler et al., 2011).

Personal information privacy is and has long been considered a fundamental and absolute right “to be let [sic] alone” (Warren & Brandeis, 1890, p. 2). When put in an individual context it has been argued that personal information can also be considered a person's ‘property’ (e.g. Tavani, 2007), thereby regarding privacy as a commodity (Smith et al., 2011), corroborating the suggestion that it can be ‘valuated’ by the individual. Regardless, it should undeniably be up to the individual to disclose personal information and make decisions on whom to allow access to it.

Even though (Westin, 1968) originally generalised the definition of privacy to the modicum of control, it is generally assumed the concept is more complex involving (amongst others) a combination of situational and cognitive factors (Laufer & Wolfe, 1977). On the individual level, privacy can then be seen as a psychological/cognitive construct: the subjective view an individual has on general privacy (Malhotra et al., 2004), which can be influenced by a myriad of personal/situational factors like prior conceptions on privacy (Bansal et al., 2010) or past experiences with privacy infringement (Bansal & Zahedi, 2015). The concern one has for their own privacy is therefore often used as a proxy to quantify the difficult-to-define concept of privacy itself (Smith et al., 2011) or of other related concepts like privacy involvement (Bansal et al., 2008).

### 6.3. INSTITUTIONAL TRUST

Mayer, Davis, & Schoorman (1995) described 'trust' as a general belief another party can be trusted. Gefen (2002) is more specific by considering trust to be an attitude or set of beliefs which express the expectations of an individual towards another entity in terms of intentions like (e.g.) benevolence, competence, and integrity (McKnight et al., 2002).

In the context of privacy, (institutional) trust can be described as the measure in which an individual believes the institution will handle personal information "... competently, reliably, and safely" (Dinev & Hart, 2006, p. 64). It is generally considered to influence privacy in some way: a higher influence has been connected to both decreased privacy concerns and increased willingness to disclose personal information (Dinev et al., 2013). However, with trust having been shown as an antecedent (Li et al., 2010), a consequent (Malhotra et al., 2004), and a mediator (Bansal et al., 2008) of privacy concern in different studies, there seems to be little clarity or consistency as to which role trust exactly fulfils in the 'antecedent-to-outcome'-chain (Miltgen & Smith, 2015; Smith et al., 2011). A compelling argument can be made that trust already exists before a decision towards disclosure is being made and may therefore – contextually – impact privacy concerns.

**H<sub>1</sub>: (Institutional) trust negatively affects privacy concern.**

### 6.4. DISCLOSURE BEHAVIOUR

Research surrounding privacy has focused on (general) Privacy Concern as a central construct, which Wirtz & Lwin (2009) suggest can be linked to negative or positive response behaviours depending on the situation. Such 'intent to disclose' is signified by the willingness of an individual to cooperate with another relevant party.

#### 6.4.1. DISCLOSURE INTENTION

Of note in the context of privacy-related behaviours is the so-called Privacy Paradox, which posits that an individual's 'willingness to disclose' is not necessarily corresponding with actual disclosure behaviours (Gerber et al., 2018; Norberg et al., 2007). Nevertheless, 'disclosure intention' is a commonly used proxy for actual behaviour.

In connection with privacy concern it is clear that to a certain extent general concern influences disclosure behaviours, whether that is because of the reliance on self-reporting or because of our limited understanding of privacy (Solove & Hoofnagle, 2006). Further, the term 'disclosure' immediately implies involvement of another party to which one has to 'open up' through disclosing personal information. Within reason, it may then be expected that the trust in the 'other' party will then also directly impact the willingness to deal with that party, and therefore the 'disclosure intentions'.

**H<sub>2</sub>: Privacy concern negatively affects the intention to allow the organisation from harvesting and making use of their personal data.**

**H<sub>3</sub>: (Institutional) trust positively affects the intention to allow the organisation to harvest and make use of their personal data.**

## **6.5. POLICY PERCEPTIONS**

The most commonly utilised perspective for privacy policy research is how their measures are perceived by the consumer/user. Measures from this perspective have been based on (e.g.) perceived policy fairness (Culnan & Armstrong, 1999), and perceived (ability to) control (Dinev et al., 2013). Perceived (ability to) control personal information has also been used as a primary definition for privacy (e.g. Smith et al., 2011; Westin, 1968), demonstrating that the entire concept of 'privacy' and its context cannot be considered unambiguous.

### **6.5.1. (PERCEIVED) TRANSPARENCY**

In policy-/regulatory contexts transparency is generally seen as the mechanism with which regulatory entities (e.g. a private or public organisation) can be held accountable (Janssen & van den Hoven, 2015). In social sciences – most commonly in the areas of Public Law and Governance – transparency is inherently linked to accountability in that absolute accountability can only be exerted under condition of absolute transparency (Fox, 2007).

In context of disclosure of personal information, 'informed consent' is an important principle which relates to an individual being properly made aware of the implications of a choice before taking a decision in both an organisational (Miltgen & Smith, 2015) as well as governmental/regulatory context (Dommeyer & Gross, 2003). 'Control (over one's own personal information)' is considered a relevant factor in almost all established conceptualisations of privacy (e.g. Dinev & Hart, 2006; Dinev et al., 2013; Li et al., 2010). The complex relationship between transparency, control and choice is why they are often used in conjunction as 'notice-and-consent' to signify a 'fair' privacy policy, the veracity of which is also facing heavy scrutiny (Martin, 2015; Nissenbaum, 2011).

Typically, privacy policies are hardly read by individuals for various reasons like readability and length (Ermakova et al., 2014), the visibility of the policy (Capistrano & Chen, 2015), comprehensibility (Bansal et al., 2008), and language (Pan & Zinkhan, 2006). Because transparency implies completeness in providing information (Grimmelikhuijsen et al., 2013), it often leads to an ultimately confounding level of detail which in turn then reduces transparency (Barocas & Nissenbaum, 2014).

Even though the presence of a privacy policy has a significant positive effect on an individual's trust in the organisation, comprehensibility factors (i.e. complexity and length) have not been shown to further impact trust (Pan & Zinkhan, 2006), thus suggesting that perceived transparency is more salient towards an individual's institutional trust than 'being informed' is. That then suggests the salience of 'trust' towards the impact of perceived transparency on consumer behaviour, as no studies were found suggesting that perception on transparency (or even on policies in general) has a direct behavioural consequence.

**H<sub>4</sub>: Perceived transparency positively affects (institutional) trust.**

## **6.6. INFORMATION LITERACY**

It is easy to discern that the current ‘citizens of the digital age’ develop a skillset to deal with rapid developments and shifting paradigms. Typically, those with more skill and comprehension on information management are better equipped to deal with the challenges the digital world inherently brings (Fraillon et al., 2014). It stands to reason that fundamental skills and knowledge on how to handle the information age will affect the way in which a person interacts with information, thus having an impact on the way they handle privacy-related issues (Park, 2013).

Ermakova et al. (2014) found that information literacy has a profound influence on both trust in an institution, as well as the perception towards an institution’s policies. The overall level of contextual knowledge may not be of direct influence on the behavioural decision-making of a subject him- or herself – as posited by Dinev & Hart (2006) – but knowledge inherently allows individuals to put related elements into proper context. That would imply it would allow the subject to assess the competence of the organisation more accurately, thereby directly impacting the trust the subject may have in such an organisation (Costante et al., 2015). In line with that, Ermakova et al. (2014) imply that information literacy may impact the effect of an individual’s transparency perceptions on the trust one has in an organisation.

**H<sub>5</sub>: Information literacy positively affects (institutional) trust.**

**H<sub>6</sub>: Information literacy positively moderates the impact of perceived transparency on (institutional) trust.**

## 7. METHODOLOGY

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### 7.1. DATA COLLECTION METHOD

As the objective of the study was to measure impact/influence of elements on each other a quantitative study was deemed most effective. Due to the number of elements in play an experimental set-up would have been too complex, thus a non-experimental survey-based set-up was deemed most reasonable since it allowed for testing of all relevant elements without excessive means necessary for support.

### 7.2. CONTEXT & PARTICIPANTS

The questionnaire was distributed at a medium-sized Higher Education Institution (HEI) in The Netherlands among full-time undergraduate students, the profile of which can be deemed representative for Dutch 'HBO-type' HEI's (i.e. universities of applied sciences) which typically focus on offering four year Bachelor-programs.

#### 7.2.1. SAMPLE POPULATION

At the start of the 2019-2020 academic year the majority of full-time Bachelor (i.e. undergraduate) students were aged between 17 and 25 years old, with a majority (~60%) of them female. The vast majority of students at the institution hold the Dutch nationality, but non-Dutch citizens are a sizeable minority within the population (i.e. ~75% Dutch vs. ~25% non-Dutch). Table 2 shows the demographic composition of the sample, which is largely in line with prior expectations.

*Table 2: Sample demographics (n = 71)*

Variable	Category	Frequency	Ratio
Age	18-	1	1.4%
	18-21	26	36.6%
	22-25	40	56.3%
	25+	4	5.6%
Gender	Female	51	71.8%
	Male	19	26.8%
	Unknown	1	1.4%
Nationality	Dutch	57	80.3%
	EU country	12	16.9%
	Non-EU country	2	2.8%



### 7.2.2. SURVEY DISTRIBUTION

Students were approached for participation on an individual basis (in line with policies of the HEI). Participation was at the students' discretion – no incentives were provided – and students with inherent dependencies (e.g. those whose graduation-phase was/is supervised by the author) were not asked to participate.

The data collection tool – LimeSurvey, as dictated by the author's university – stores data outside of the HEI's own digital environment. Therefore, the permission of the HEI's Data Protection Officer was attained to distribute this survey using the HEI's own communication channels.

Given the subject of the study itself, it was only logical to guarantee full anonymity of the respondents to increase response rates for the survey. The survey was initially spread to students over a period of 3 weeks in March 2020, but due to low response numbers this was extended over most of April (i.e. ~6 weeks in total). Students received at least 2 reminders over this period through various digital channels. For reference, the full questionnaire is available in Appendix 4: Questionnaire.

### 7.3. STRUCTURAL DESIGN

Figure 2 shows the research model, where the solid and dashed lines respectively signify positive and negative hypothesised relationships.

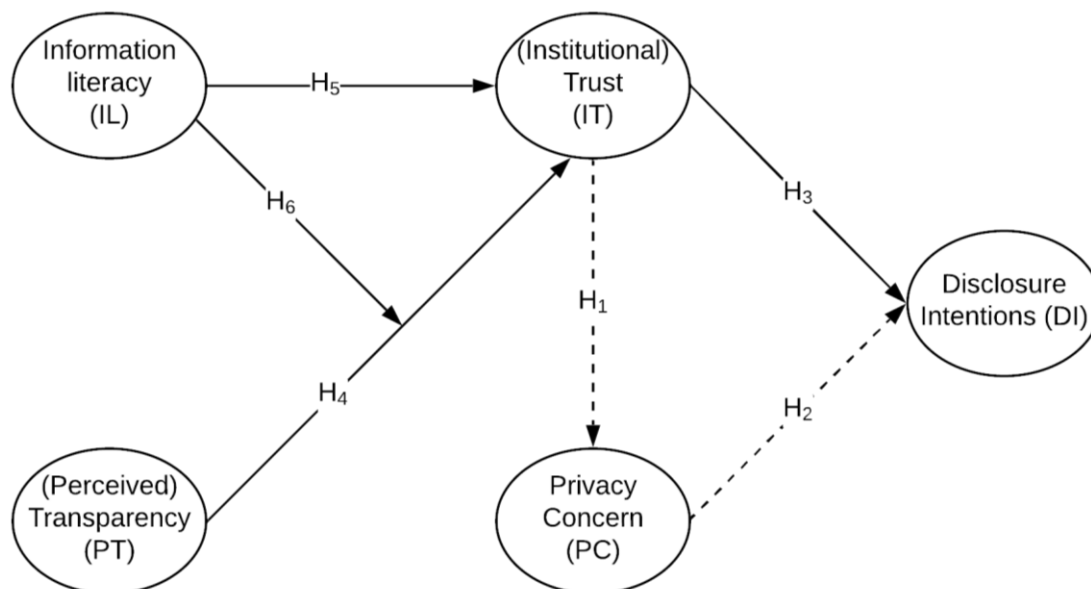


Figure 2: Proposed Research Model

hypothesised relationships.

The model consists of five latent variables: information literacy (**IL**), perceived transparency (**PT**), institutional trust (**IT**), privacy concern (**PC**), and disclosure intentions (**DI**).

Hypotheses were formulated based upon prior research, which are presented as relationships in Figure 2:

- **H<sub>1</sub>**: Institutional trust negatively affects privacy concern.
- **H<sub>2</sub>**: Privacy concern negatively affects the intention to allow the organisation from harvesting and making use of their personal data.
- **H<sub>3</sub>**: Institutional trust positively affects the intention to allow the organisation to harvest and make use of their personal data.
- **H<sub>4</sub>**: Perceived transparency positively affects institutional trust.
- **H<sub>5</sub>**: Information literacy positively affects institutional trust.
- **H<sub>6</sub>**: Information literacy positively moderates the impact of perceived transparency on institutional trust.

## 7.4. TECHNICAL DESIGN

Figure 3 shows the measurement model detailing the five latent variables and their underlying (i.e. outer) constructs for the four formative constructs (IL, PT, IT, and PC). The solid and dashed lines signify positive and

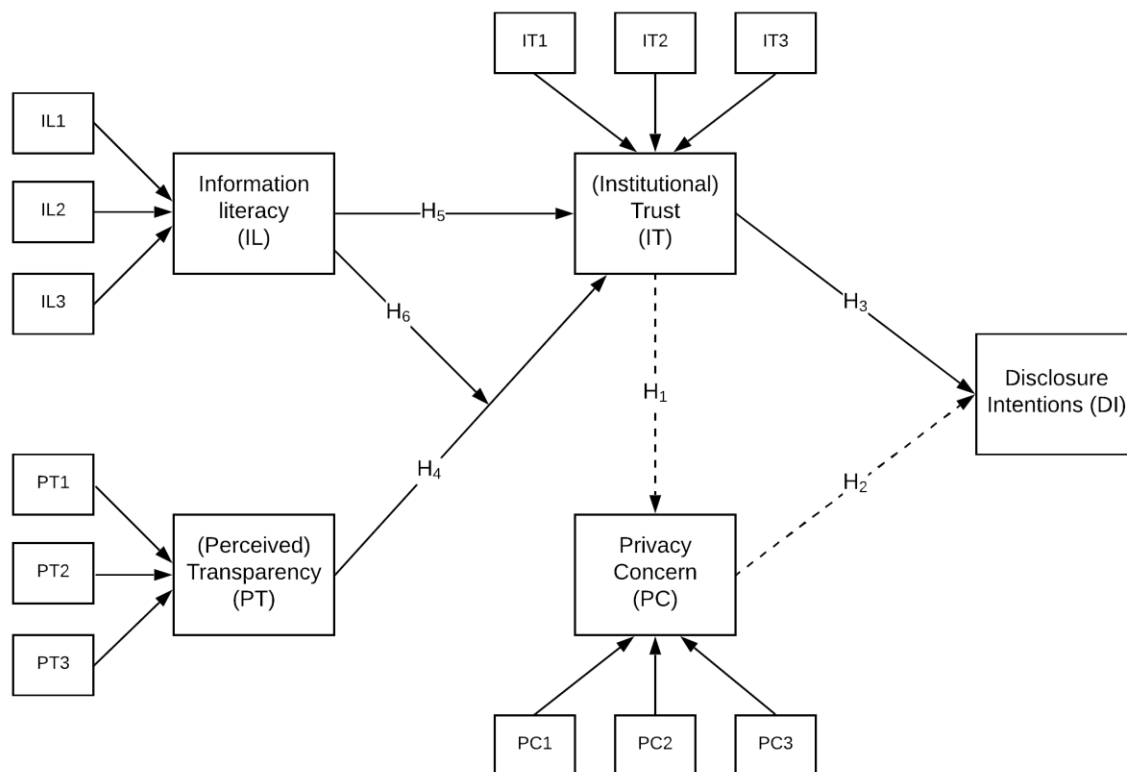


Figure 3: Measurement model incl. outer constructs

negative relationships, respectively.

The measuring instruments representing all the variables shown in Figure 3 are detailed in Table 3 through Table 7: all were measured using a 7-point Likert (-type) scale. The scale used the following options per Saunders, Lewis, & Thornhill (2019):

- 1- *Strongly agree; Moderately agree; Slightly agree.*
- 2- *Neither agree nor disagree.*
- 3- *Slightly disagree; Moderately disagree; Strongly disagree.*

#### 7.4.1. PRIVACY CONCERN

The Concern for Information Privacy (CFIP) scale by (Smith et al., 1996) is considered the dominant measuring scale for general privacy concerns (Smith et al., 2011). An updated rendition of the CFIP scale – the Internet Users' Information Privacy Concern (IUIPC) model by Malhotra et al. (2004) adds 10 items to the CFIP scale to make it more contemporarily viable. The IUIPC model consists of 3 formative dimensions each measured by multiple items, which are detailed in Table 3.

*Table 3: Dimensions & itemisation of Privacy Concern (PC)*

Constructs	Source	Dimensions	Code	Measurement items
Privacy concern [PC]	<i>Adapted from:</i> Malhotra et al (2004)	Control [PC1]	PC11	Consumer online privacy is really a matter of a consumer's right to exercise control and autonomy over decisions about how their information is collected, used, and shared.
			PC12	Consumer control of personal information lies at the heart of consumer privacy.
			PC13	I believe that online privacy is invaded when control is lost or unwillingly reduced as a result of a marketing transaction.
		Awareness [PC2]	PC21	Organisations seeking information online should disclose the way the data are collected, processed, and used.
			PC22	A good consumer online privacy policy should have a clear and easy-to-find disclosure.
			PC23	It is very important to me that I am aware and knowledgeable about how my personal information will be used.
		Collection [PC3]	PC31	It usually bothers me when organisations ask me for personal information.
			PC32	When organisations ask me for personal information I sometimes think twice before providing it.
			PC33	It bothers me to give personal information to so many organisations.
			PC34	I am concerned that organisations are collecting too much personal information about me.

#### 7.4.2. INSTITUTIONAL TRUST

While trust is a general concept which can be seen in multiple manners, in privacy research it has generally been considered as a multi-dimensional construct (Keen et al., 2000). McKnight et al. (2002) developed a framework to measure institutional trust which has been a go-to measure for trust in organisations and thus has seen ample

validation over time. The model measures the trust of the subject towards an organisation on three formative dimensions – *Benevolence*, *Integrity*, and *Competence* – each of which is measured by multiple items as detailed in Table 4. The items from the scale by McKnight et al. (2002) were slightly adjusted to fit the context of the study.

Table 4: Dimensions and itemisation of Institutional Trust (IT)

Constructs	Source	Dimensions	Code	Measurement items
(Institutional) Trust [IT]	Adapted from: McKnight et al (2002)	Benevolence [IT1]	IT11	I believe that [organisation] would act in my best interest.
			IT12	If I required help, [organisation] would do its best to help me.
			IT13	[organisation] is interested in my well-being, not just its own.
		Integrity [IT2]	IT21	[organisation] is truthful in its dealings with me.
			IT22	I would characterise [organisation] as honest.
			IT23	[organisation] would keep its commitments.
		Competence [IT3]	IT31	[organisation] is competent and effective in providing education.
			IT32	[organisation] performs its role of providing education very well.
			IT33	Overall, [organisation] is a capable and proficient educational institution.
			IT34	In general, [organisation] is very knowledgeable on education.

Note: the placeholder [organisation] was replaced by the name of the organisation.

### 7.4.3. PERCEIVED TRANSPARENCY

In defining transparency, Grimmelikhuijsen et al. (2013) distinguish 3 types of transparency which together contribute towards the overall principle of transparency in policy-making: *Decision-making* transparency, *Policy* transparency, and *Policy outcome* transparency. For each of these types of transparency they identified three dimensions which together form perception towards institutional transparency:

- *Completeness*, which signifies the level of comprehensiveness with which information on policy decision-making is provided.
- *Colour*, which signifies the perceived ‘neutrality’ with which information on policy decision-making is being provided.
- *Usability*, which relates to the perceived comprehensibility and utility of provided information on policy decision-making.

Thus, the model consists of 3 formative dimensions, each of which was measured by multiple items as shown in Table 5. The items from the original scale were slightly altered to represent the context of this study.

Table 5: Dimensions and itemisation of Perceived Transparency (PT)

Constructs	Source	Dimensions	Code	Measurement items
Perceived Transparency [PT]	Adapted from: Grimmelik-	Completeness [PT1]	PT11	Complete information about the manner in which [organisation] makes decisions regarding the use of my personal information is available to me.

Constructs	Source	Dimensions	Code	Measurement items
	huijsen et al (2013)	Colour [PT2]	PT12	All relevant policy plans and policy measures of [organisation] are available to me.
			PT13	Outcomes of policy implementations at [organisation] are made available along with all relevant qualitative and quantitative data.
			PT21	When [organisation] provides information on decisions it clearly reflects all values and opinions considered in the decision-making process.
			PT22	Information on policy decisions at [organisation] reflects both negative and positive issues related to their implementation.
			PT23	Effects of policy decisions at [organisation] are determined objectively, and there is room for dissenting opinions about the policy outcomes.
		Usefulness [PT3]	PT31	The decision-making process at [organisation] is made insightful in a timely and understandable manner.
			PT32	Policy plans and measures at [organisation] are made insightful in a timely and understandable manner.
			PT33	Policy outcomes at [organisation] are made insightful in a timely and understandable manner.

*Note: the placeholder [organisation] was replaced by the name of the organisation.*

#### 7.4.4. INFORMATION LITERACY

As with all skills and competencies, information literacy is not easily measured since self-reporting is typically unreliable: that is, humans are notoriously inconsistent in judging their own (in-)competence (Kruger & Dunning, 1999) which has also been shown explicitly in direct relation to information literacy (Porat et al., 2018).

A simple method for measuring information literacy is to conduct a small theoretical test to gauge present knowledge, while the most comprehensive option is to use a multi-dimensional model combining several ICT-related competencies (e.g. Park, 2013). The third fairly common alternative is to focus on a subject's stated information literacy (e.g. Ermakova et al., 2014).

The scale by Ng (2012) which was selected to measure 'information literacy' is of the latter category, and it consists of three formative dimensions – Technical, Cognitive, and Social-emotional – each measured by multiple items, which were slightly adapted to reflect contemporary practice as can be seen in Table 6.

*Table 6: Dimensions and itemisation of Information Literacy (IL)*

Constructs	Source	Dimensions	Code	Measurement items
Information Literacy [IL]	Adapted from: Ng (2012)	Technical [IL1]	IL11	I know how to solve my own technical problems.
			IL12	I can learn new technologies easily.
			IL13	I keep up with important new technologies.
			IL14	I know about a lot of different technologies.
			IL15	I have the technical skills I need to use IT for learning and to create 'artefacts' (e.g. presentations, reports, digital stories, blogs) which demonstrate my understanding of what I have learned.
			IL16	I have good IT skills.
		Cognitive [IL2]	IL21	I am confident with my 'search and evaluate' skills in regard to finding information online.

	IL22	I am familiar with issues related to online activities like tracking, privacy, personalised search, etc.
Social-emotional [IL3]	IL31	I frequently get help on my university work from friends online using (for example) WhatsApp, Skype, Facebook, or Reddit.
	IL32	IT enables me to collaborate better with my peers on project work and other learning activities.

#### 7.4.5. DISCLOSURE INTENTIONS

While not impossible, measuring ‘actual behaviour’ through a questionnaire would depend on recollection and/or self-reporting by the subject which can seriously impact the reliability of the study, but looking at conscious intent is a fairly common proxy to replace the actual behaviour.

Because of the context of the study – Higher Education Institutions – and the nature of the dichotomous choice subjects make regarding personal information disclosure – either to opt in or out of disclosure – there is little nuance in such a statement of intent to be measured (i.e. there is no such thing as ‘semi-opted-in’). This has led to the selection of a very general scale for measuring behavioural intent (Xu et al., 2009). The scale used by Xu et al. (2009) needed only minor adaptations, as their study is based on a similar premise to this one: opening up for tracking and harvesting personal information by an organisation (Table 7).

*Table 7: Itemisation of Disclosure Intentions (DI)*

Construct	Source	Code	Measurement items
Disclosure intentions (DI)	<i>Adapted from:</i> Xu et al (2009)	DI11	I am likely to allow [organisation] to track and harvest my personal information and online behaviour.
		DI12	I am willing to allow [organisation] to track and harvest my personal information and online behaviour.
		DI13	I will probably not allow [organisation] to track and harvest my personal information and online behaviour.

*Note: the placeholder [organisation] was replaced by the name of the organisation.*

#### 7.4.6. CONTROL VARIABLES

Due to the effects they are expected to have, the following variables were included in the survey for control purposes:

- **Age** – Milne & Rohn (2000) found that while older individuals tend to request removal from (e.g.) mailing lists more often, younger individuals are less likely to provide their information to organisations in the first place.
- **Gender** – Milne & Rohn (2000) also found that women are more likely to be protective of their personal information than men, suggesting a higher privacy concern to be expected in women (Dommeyer & Gross, 2003). Furthermore, research has suggested gender being an indicator for digital literacy as well (Rohatgi et al., 2016).

- **Nationality/Origin** – While research does not clearly suggest nationality specifically to be of influence in this context, Culnan & Armstrong (1999) and Acquisti et al. (2015) showed variance in privacy concern based on cultural background. This justifies its inclusion, but with Nationality as a ‘simple’ proxy for cultural differences in (e.g.) perceived power distance and short-/long-term outlooks.

Table 8: Variables included for purposes of control

Variable	Item	Responses
Age	What is your current age?	18-, 18-21, 22-25, 25+, NA
Gender	Which gender designation do you identify with?	Male, Female, Prefer to self-describe [ <i>fill in</i> ], NA
Nationality	Which nationality do you carry?	Dutch, EU-citizen, non-EU, NA

Given the subject of the study (i.e. related to privacy and information disclosure) it was deemed appropriate and sensible to allow respondents to opt out of answering the demographic questions through the option *Prefer not to answer* (NA) for questions related to the Age, Gender, and Nationality variables. For the purpose of inclusivity, the option *Prefer to self-describe...* was added with the question related to the Gender variable.

Other variables which have been considered but were not included:

- **GDPR familiarity** – Due to the relevance of the salient contextually relevant legislation in this matter, this is expected to correlate with many of the included items pertaining privacy concern, information literacy and perceived transparency (Correia & Compeau, 2017). This was left out because of the ambiguity involved in interpretation of the question (i.e. either has to be meticulously defined, or use ‘general’ terms like ‘familiarity’ which are too subjective to be useful).
- **Social awareness** has been shown to influence the privacy concerns of individuals, especially when considered in interaction with information literacy (Dinev & Hart, 2006), but most available scales for measuring social awareness would add to the length of the questionnaire too much.
- While **personality type** appears to be of influence towards the general privacy concern of individuals (Bansal et al., 2010) the added value of controlling for personality must be weighed against the effect it will have on the length of the questionnaire as even the most compact personality (trait) tests would put a higher burden on the respondent.

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## 8. RESULTS

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The purpose of this study was to assess the impact of (primarily) perceived transparency and (additionally) information literacy on disclosure behaviour through their influence on both information privacy concerns and institutional trust. To achieve that, the collected data was analysed using a structural equation modelling (SEM) approach using the Partial Least Squares method (i.e. PLS-SEM) with 4.999 bootstrap subsamples per run. While covariance-based SEM (CB-SEM) is more widely known and adopted, PLS-SEM has distinct advantages over CB-SEM for this particular study (Chin, 2010; Kline, 2011):

- Suitability for use with models containing both formative and reflective constructs.
- PLS is less affected when a model is either incorrectly specified or incomplete: the latter is presumed to be the case in this thesis as other factors of note may be involved which fall beyond the scope of this study.
- Sample size requirements are less stringent than with CB-SEM.

Calculations were performed using two dedicated software applications: *SmartPLS 3* and *ADANCO*<sup>1</sup>. Any relevant deviations from typical PLS-SEM procedures will be noted where applicable. Following PLS reporting standards, initially the reliability and validity of the (outer) measurement model were assessed, after which the structural model was tested (Chin, 2010).

### 8.1. MEASUREMENT MODEL

The research model can be split into two separate parts: the measurement model and the structural model. The measurement (i.e. outer) model consists of all elements outside the structural model. The structural model contains five latent variables (Figure 2), of which only Disclosure Intentions is a reflective construct, while the other four are formative constructs which are made up of multiple reflective constructs (i.e. dimensions). See Appendix 3: Measurement Model (Inner/Outer) for a detailed view of the measurement model.

The results on the outer model are shown in Table 9 including descriptive statistics, reliability measures, inter-construct correlations, and Average Variance Extracted (AVE).

The internal reliability of the outer model was considered with Cronbach's  $\alpha$  as a lower bound (conservative) estimate, and composite reliability ( $\rho_c$ ) as the determinant since it does not assume weighting equivalence (Chin, 2010; Werts et al., 1974). While four constructs showed less than acceptable internal reliability (i.e.  $\alpha < 0.7$ ), all

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<sup>1</sup> Two applications were used because *SmartPLS 3* is better equipped to handle moderator variables than *ADANCO*.



constructs but one showed acceptable composite reliability ( $\rho_c > 0.7$ ) for models which are based on established measures (Bagozzi & Yi, 1988)) with only IL3 the exception. Convergent validity was checked using Average Variance Extracted (AVE), for which the 0.5 threshold was met by all but one construct (PC2).

Outer model loadings and cross-loadings support both discriminant validity and internal consistency for all item measures on their respective factors, with all items loading at least 0.2 higher on their own construct compared to other ('neighbouring') dimensions of the same construct. Items should load at least 0.7 on their own construct. For details please see Appendix 2: Loadings & Cross-loadings.

The following items were considered for removal. Per variable the considerations and final determination are briefly explained below:

- **IL31** was removed because of low loading on IL3 (.5215), and because IL3 showed extremely low internal reliability ( $\alpha = .0777$ ) and low composite reliability ( $\rho_c = .6686$ ) with IL31 included. Removal makes IL3 a single-item construct, thus disabling any checks on reliability or (convergent) validity.
- **PC12** was removed because of low loading (.6334) on PC1 putting indicator reliability below 0.5.
- **DI12** was removed because of redundancy (validity) issues (i.e.  $\rho_c > .95$ ) with all three DI indicators included, of which DI12 was the primary culprit, removal of DI12 brought composite reliability to acceptable levels (i.e.  $\rho_c < .95$ ).

After removal of the identified items the indicators of the four formative constructs (IL, PT, IT, and PC) were assessed.

Multicollinearity between the (standardised) formative indicators was assessed using Variance Inflation Factors (VIF) and found to be well within acceptable limits (VIF min. 1.1107 – max. 2.2532) with VIF < 5.0 being the (conservative) cut-off (Table 9).

It should be noted that almost all indicators (except PT3) showed non-significant weights and several also showed non-significant loadings. Hair et al. (2019, p. 10) suggest both non-significant loading and weight means indicators "should definitely be eliminated". However, to maintain the structure of the original scales and thus the content validity of the model no formative indicators were entirely removed (Diamantopoulos & Siguaw, 2006).

The evidence provided on internal consistency, composite reliability, convergent validity, and discriminant validity, and the appropriate interventions suggests the measurement model is suitable for testing the structural model.

Table 9: Descriptive statistics, Reliability measures, Correlations, Average Variance Explained (AVE), and outer Variance Inflation Factors (VIF)

	# items	$\mu$	$\sigma$	$\alpha$	$\rho_c$	VIF	IL	PT	IT	PC	DI	IL1	IL2	IL3	PT1	PT2	PT3	IT1	IT2	IT3	PC1	PC2	PC3
IL	10	4.96	1.52																				
PT	9	4.09	1.30				0.27																
IT	10	5.65	1.16				0.05	0.52															
PC	10	5.81	1.26				0.07	-0.04	0.29														
DI	3	3.74	1.86	0.96	0.97		0.21	0.30	0.22	-0.27	<b>0.92</b>												
IL1	6	4.85	1.58	0.92	0.94	1.41	0.85	0.15	0.02	0.09	0.22	<b>0.71</b>											
IL2	2	5.02	1.22	0.63	0.84	1.20	0.68	0.17	0.07	0.08	0.21	0.41	<b>0.73</b>										
IL3	2	5.25	1.56	0.08	0.67	1.20	0.72	0.30	0.01	-0.03	0.04	0.45	0.18	<b>0.52</b>									
PT1	3	3.77	1.38	0.91	0.94	2.01	0.21	0.83	0.24	-0.08	0.15	0.17	0.05	0.26	<b>0.84</b>								
PT2	3	4.12	1.25	0.83	0.90	2.14	0.24	0.88	0.42	-0.04	0.25	0.16	0.12	0.27	0.67	<b>0.74</b>							
PT3	3	4.38	1.19	0.85	0.91	1.90	0.25	0.89	0.56	-0.01	0.33	0.08	0.23	0.27	0.61	0.64	<b>0.77</b>						
IT1	3	5.46	1.27	0.80	0.88	2.25	-0.04	0.40	0.87	0.18	0.15	-0.01	-0.10	0.01	0.21	0.29	0.46	<b>0.72</b>					
IT2	3	5.50	1.08	0.85	0.91	1.98	-0.08	0.39	0.84	0.27	0.18	-0.07	-0.05	-0.07	0.19	0.36	0.38	0.70	<b>0.77</b>				
IT3	4	5.91	1.08	0.93	0.95	1.32	0.22	0.38	0.74	0.22	0.22	0.15	0.26	0.09	0.09	0.30	0.47	0.49	0.37	<b>0.83</b>			
PC1	3	5.82	1.21	0.59	0.78	1.25	0.13	-0.09	0.21	0.74	-0.13	0.15	0.02	0.12	-0.17	-0.02	-0.08	0.15	0.18	0.15	<b>0.54</b>		
PC2	3	6.26	1.04	0.48	0.74	1.11	0.17	-0.02	0.22	0.70	-0.14	0.20	0.22	-0.06	-0.03	-0.06	0.01	0.10	0.15	0.28	0.29	<b>0.49</b>	
PC3	4	5.47	1.34	0.81	0.88	1.23	-0.11	-0.01	0.15	0.79	-0.32	-0.12	-0.02	-0.10	-0.02	-0.05	0.01	0.07	0.21	0.03	0.39	0.32	<b>0.64</b>

**Notes:**

1.  $\mu$  = Mean across all indicator items
2.  $\sigma$  = Standard deviation across all indicator items
3.  $\alpha$  = Internal consistency (Cronbach's  $\alpha$ )
4.  $\rho_c$  = Composite reliability (Jöreskog's  $\rho$ )
5. Columns DI-PC3: Off-diagonal numbers are correlations, diagonals (bold) are AVE (Average Variance Extracted)

## 8.2. STRUCTURAL MODEL

As the measurement model was accounted for the structural model was then tested by examining path coefficients, path significance, coefficient of determination values, and effect sizes to test the hypotheses of this study. A hypothesis is supported when a statistically significant relation of two endogenous constructs is detected in the presumed (i.e. hypothesised) direction.

The hypothesised relationships between the latent variables were examined using (standardised) regression coefficients ( $\beta$ ), also looking at both direct and indirect effects (Table 10). Effect sizes for each relationship were calculated by comparing  $R^2$  for the dependent variable with the independent variable in- and excluded ( $f^2$ ), providing either a large ( $f^2 > 0.35$ ), medium ( $f^2 > 0.15$ ), or small ( $f^2 > 0.02$ ) effect size (below 0.02 is unsubstantial).

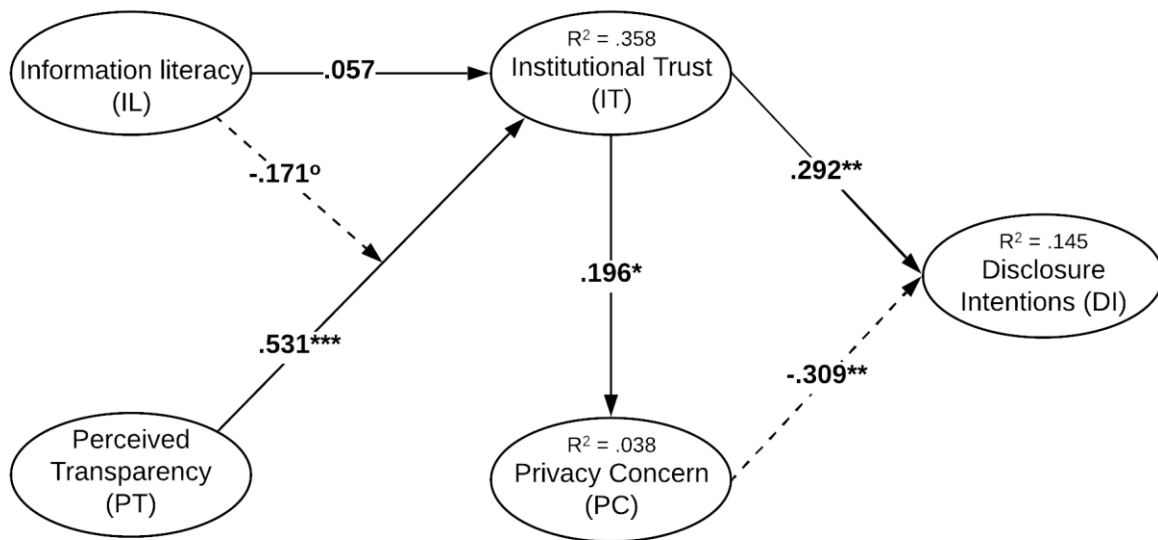


Figure 4: Structural model results incl. path coefficients ( $\beta$ ) and Variance Explained ( $R^2$ )

Notes (for all models with coefficients from here onwards):

- ❖  $*P < 0.05$ ,  $**P < 0.01$ ,  $***P < 0.001$  (two-tailed)
- ❖  $^\circ P < 0.05$  (one-tailed)
- ❖ Unmarked means not significant

As shown in Figure 4, the structural model is only partially confirmed, with three out of six hypothesised relationships showing as statistically significant, two showing significance in the opposite direction (one of them only in a one-sided P-test), and one showing as non-significant.

The results of the PLS primarily show that transparency has a large effect on trust in an institution, but that it does not necessarily further translate in a higher willingness to disclose personal information in the subject. They also

show that willingness to disclose is not predominantly explained through either trust in an institution, through the general concerns regarding privacy, or a combination of both.

Tests were re-run with only the significant relationships included to examine a possible difference in  $R^2$  of the dependent variable (DI), but there was no observable difference to its variance explained with their removal.

*Table 10: Structural model results incl. hypotheses, effects, and effect sizes*

Effect	Hyp.	Direct effects	Indirect effects	Total effect	Cohen's $f^2$	$f^2$ ratings
IL → IT	H <sub>5</sub>	0.0566		0.0566	0.0044	-
IL → PC			0.0111	0.0111		
IL → DI			0.0131	0.0131		
PT → IT	H <sub>4</sub>	0.5311***		0.5311***	0.4038	Large
PT → PC			0.1038*	0.1038*		
PT → DI			0.1228°	0.1228		
IT → PC	H <sub>1</sub>	0.1955*		0.1955*	0.0397	Small
IT → DI	H <sub>3</sub>	0.2917**	-0.0605	0.2312°	0.0957	Small
PC → DI	H <sub>2</sub>	-0.3092**		-0.3092**	0.1076	Small
Mod → IT	H <sub>6</sub>	-0.1708°		-0.1708°	0.0425	Small
Mod → PC			-0.0334	-0.0334		
Mod → DI			-0.0395	-0.0395		
PT → IT → DI			0.155*			
PT → IT → PC			0.104*			

❖ \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$  (two-tailed)  
❖ ° $P < 0.05$  (one-tailed)  
❖ Unmarked means not significant

The six hypotheses of this study pertained to the predictive role of information literacy (IL), institutional trust (IT), perceived transparency (PT) and privacy concerns (PC) towards behavioural (disclosure) intentions (DI), and the associations between those variables. Based on the results of the discussed tests the model has some predictive power, but to a limited extent as it explains 14.5% of variance in behavioural intentions ( $R^2 = 0.145$ ). Of note is that none of the effect sizes were significant.

H<sub>1</sub>, which posited a negative effect of institutional trust on privacy concerns, is not supported (as it shows as significantly positive rather than negative). However, support is present for both H<sub>2</sub> – stating a negative impact of privacy concerns on willingness to disclose personal information – and H<sub>3</sub> – stating a positive impact of institutional trust upon that willingness. H<sub>4</sub> posits that (perceived) transparency would have a positive effect on trust in the institution, which is also supported in the results. H<sub>5</sub> states that information literacy affects institutional trust directly, but this is not supported in the results. H<sub>6</sub> – on the influence of information literacy on the impact of transparency on trust – shows (one-tailed) significance in the opposite direction, meaning it is not supported.

### 8.2.1. CONTROL VARIABLES

Nationality showed a statistically significant association with perceived transparency, privacy concern, and disclosure intent. However, once nationality was added as a predictor the variance explained of disclosure intentions was impacted almost exclusively in a direct manner by nationality (i.e. not through one of the predictors), suggesting that nationality does not impact the predictive validity of the model. Both age and nationality did not show a significant association with the DV in a way that it was deemed necessary to further consider them.

### 8.2.2. EXPLORED ALTERNATIVES

During examination of the data, several alternative associations came suggested through the data.

The nature of the relationship between trust and privacy concern is inconclusively debated in existing literature, providing grounds for further examination. The decision to reverse the relationship (i.e.  $PC \rightarrow IT$ ) led to an increase in the strength of the association ( $\beta = .222$ ) with similar significance ( $P < .05$ ), but interestingly also increased the effect size ( $f^2$ ) of that relation between perceived transparency and trust from .4038 to .4503. Another side-effect of that reversal is that it made the moderation effect of information literacy in the model stronger and fully significant (i.e. two-tailed at  $P < .05$ ).

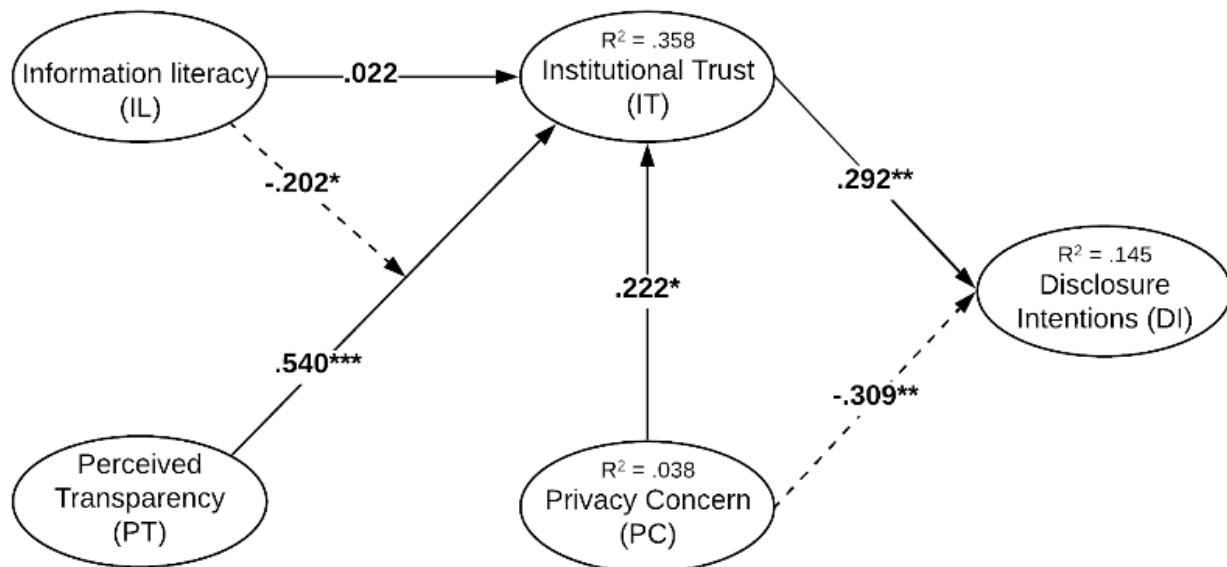


Figure 5: PC→IT model variant

Since prior individual dispositions towards an organisation is just one of many biases which are known to potentially affect the perception of the organisation's actions by the individual (Bazerman & Moore, 2017), it was deemed reasonable to further explore that relationship. When the relationship between trust, transparency and behavioural intentions was reversed with a direct link between transparency and behaviour intentions (Figure 6), the association became stronger ( $\beta = .567$ ), while maintaining its significance ( $P < .001$ ), but with the reversal the

model also explained more of the variance of disclosure intentions ( $R^2 = .185$ ). Additionally, the path coefficient of trust to disclosure intentions lost its significance, and when removed (i.e. only  $IT \rightarrow PT \rightarrow DI$ ) both new paths showed (Figure 7) as highly significant ( $P < .001$ ).

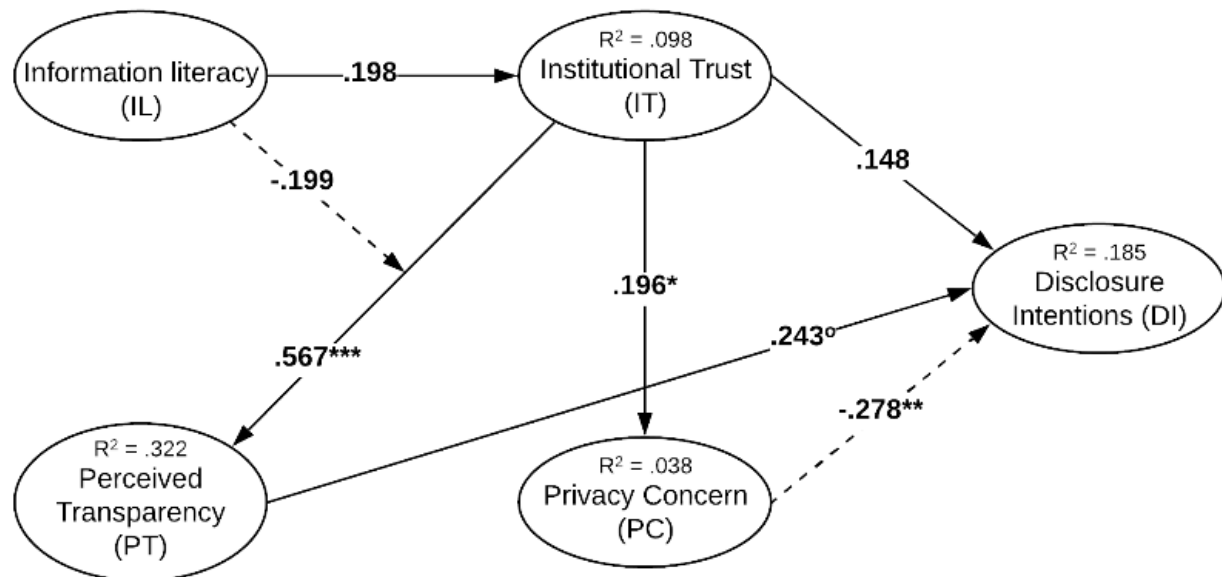


Figure 6:  $IT \rightarrow PT \rightarrow DI$  model variant with original  $IT \rightarrow DI$  path

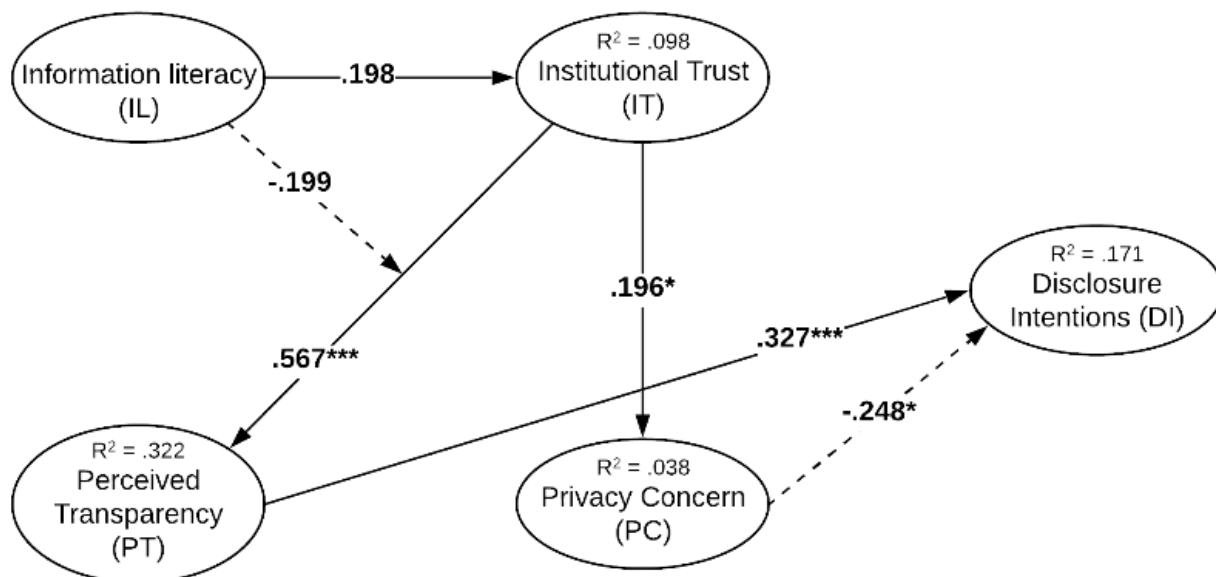


Figure 7:  $IT \rightarrow PT \rightarrow DI$  model variant without original  $IT \rightarrow DI$  path

Finally, in applying the moderator effect of information literacy a relationship was detected – which was not hypothesised beforehand – between information literacy and perceived transparency (Figure 8), and which

showed as significant ( $P < .01$ ). However, it only produced relatively low explanatory power over perceived transparency ( $R^2 = .078$ ), while not taking away from the original moderating effect.

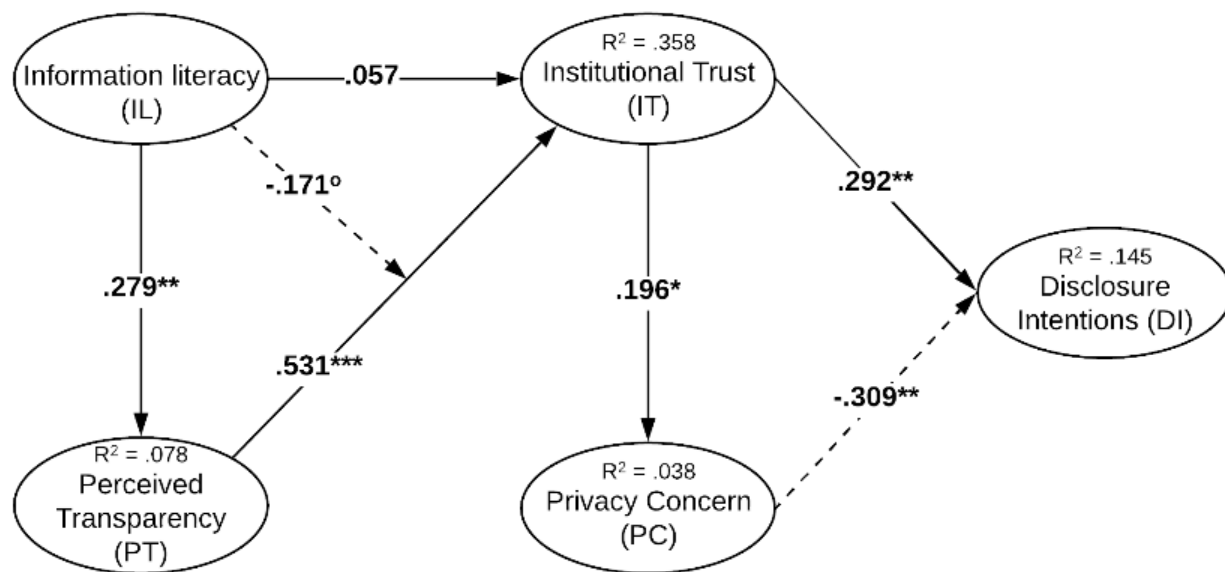


Figure 8: IL→PT model variant

Note: While testing alternative models after the initial theoretical model may come across as dredging<sup>2</sup> or HARKing<sup>3</sup>, with a reasonable (theoretical) basis for such 'alternative' models it can be deemed acceptable to further explore the data as long as it is transparently reported as such with the proper connotations and context (Hair et al., 2019).

<sup>2</sup> Exhaustively looking for patterns in a dataset to the end of finding something statistically significant to report.

<sup>3</sup> 'Hypothesising After the Results are Known': presenting a post hoc hypothesis as an a priori hypothesis.

## 9. DISCUSSION & RECOMMENDATIONS

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The results of the analysis are discussed and interpreted in a broader context, after which the limitations of this study are discussed which may impact that interpretation. Several recommendations are then provided for both the academic and practical field before the conclusion itself.

One prior note is that the overarching explanatory concepts in this thesis – PT, IL, IT, and PC – are all highly complex and debated in existing literature, as such it may be good to note beforehand that this discussion will not be conclusive.

### 9.1. DISCUSSION

First off, it can be stated that the explanatory ‘strength’ of the model is relatively small and is meaningful only to a limited extent. The results suggest a significant presence of all four suggested antecedents (information literacy only through a moderated effect) in formation of a decision, but the limited predictive power of the model – 14.5% of disclosure intentions’ variance explained – suggest the model is (at least) incomplete and (probably) misspecified. The explored alternatives also point in that direction, with several alternative predictive paths between the existing variables providing more substantial and meaningful results.

The largest significant effect in this study, the impact of perceived transparency on institutional trust, is interesting because relatively little research has been done on the perception of the phenomenon in a policy context (Schnackenberg & Tomlinson, 2016). This is because most (policy-oriented) research has focused on specific elements like (e.g.) ‘readability’ (Ermakova et al., 2014) or ‘visibility’ (Capistrano & Chen, 2015), and on its link to more personal characteristics like ‘perceived leadership’ (Norman et al., 2010). The results of this study suggest the personal perception of an institution’s transparency to have a strong relation with the disposition towards the trustworthiness of the organisation.

However, the alternative model for trust and transparency (Figure 6 and Figure 7) showed significant (stronger) results while not supporting the direct link between institutional trust and disclosure intentions. This could suggest that the a priori trust in the organisation somehow impacts the perception of transparency rather than the other way around, which would go against most established concepts of how trust is formed (e.g. Gefen, 2002; Miltgen & Smith, 2015; Smith et al., 2011).

Contrary to several prior studies (e.g. Malhotra et al., 2004), institutional trust showed a positive impact on general privacy concerns ( $R^2 = 0.038$ ), which is surprising as an increase in trust should (logically) mean a subject should only become less concerned about their personal privacy when dealing with trustworthy other parties. Exploring



alternative 'paths' suggested that the impact of privacy concerns on trust may be more profound than the hypothesised relation. Trust may not be a contextual factor to consider in the role of a (situational) antecedent to privacy concerns, but rather as a consequent as shown in several other studies (e.g. Malhotra et al., 2004; Miltgen & Smith, 2015).

Though the direct role of information literacy lacks support, the moderating effect on the relation between transparency and trust did show some (i.e. one-tailed) significance (not in the hypothesised direction), which even increased with one of the alternative models suggesting that initial significance may be a lower bound. It would fit with prior research that a better contextual understanding (information literacy) alters the effect an observed element (perceived transparency) has on a disposition (institutional trust) (Costante et al., 2015). However, the alternative model with a significant direct relation between information literacy and transparency (Figure 8) provides an alternative explanation for the moderating effect, which makes sense because of the (stated) perceived nature of transparency in this study.

## 9.2. LIMITATIONS

There are multiple limitations of note related to how this study was conducted which may (negatively) impact the interpretation of its results. Primarily, this study was aimed at looking how a (limited) set of 'perceptions' inform the decision-making on disclosure of personal data, but not at how the perceptions are formed. If an exhaustive picture is to be 'painted' on 'how decisions on information disclosure are being made' both the formation of perceptions and their processing into decision-making behaviours should be a part of that model (Dinev et al., 2013).

The limited context provided to subjects may limit the predictive power of the model. Prior studies have shown that salient beliefs and situational differences may affect an individual's perception (Smith et al., 1996; Stewart & Segars, 2002), just as the 'subject' of the final disclosure (e.g. sensitive vs. non-sensitive personal information) may be a relevant factor in the decision-making process (Martin, 2015; Milne & Gordon, 1993).

The instrument to measure 'information literacy' by Ng (2012) was selected to benefit (i.e. decrease) respondent burden over a more comprehensive and widely accepted scale developed by Park (2013) being deemed more suitable purely for measurement purposes. The selected instrument is also aimed at self-reported information literacy rather than actual aptitude measurement, thus more a representation of the subjects' confidence in their information literacy rather than a measurement of actual aptitude. This potentially hurts the validity of the results.

A (possible) issue with generalisability is that the design of the study only included a single sample, rather than multiple independent samples. This ties in with lacking the ability to test for out-of-sample predictive power (discussed below) of the model, as both produce issues to generalisability.

Sample size in SEM is a heavily debated subject, because of its severe impact on the interpretability of its results. While there is no specific 'go to' measure for sample size determination for PLS-SEM, this study's sample size would probably be considered 'meagre' in comparison to more comprehensive studies. The limited sample size of this study poses several limitations on the interpretation of its results:

- While PLS-SEM is considered 'more robust' towards small sample sizes it does not allow reliable detection of lower path coefficients (e.g. 0.2) with small samples.
- The current results are limited in predictive power unless their out-of-sample predictive power is assessed using cross-validation methods like CVPAT. However, such methods have limited utility on sample sizes below 100, meaning out-of-sample power could not be assessed accurately in this study.

At the risk of redundancy, it is relevant to point out that despite the low sample size the study did produce a highly significant ( $P < .001$ ) strong association between transparency and trust ( $\beta = .531$ ) with a robust effect size ( $f^2 = .4038$ ) which should not be discounted despite the (relatively) small sample size. Even though it is worth to note again that none of the reported effect sizes are significant, this can be a result of the small sample size, while the resulting effect size itself cannot.

Finally, there are obvious limitations to conducting this type of empirical study when it comes to the depth and richness of its outcomes versus qualitative approaches.

### 9.2.1. COVID-19 OUTBREAK

Data was collected in March-May of 2020. During this time, the crisis surrounding the Covid-19 pandemic may have had an impact on subjects' lives which may have influenced their responses. Students' willingness to fill in a questionnaire had diminished due to high 'surveying density' during this period<sup>4</sup>. Such 'survey fatigue' could be a cause for the low completion rate (i.e. 46%).

Furthermore, the introduction of online proctoring tools received heavy resistance from students, which could potentially influence the general awareness and concern surrounding privacy policy measures. Therefore, once this occurred the data collection was stopped pre-maturely.

## 9.3. IMPLICATIONS & RECOMMENDATIONS

Below follow several implications and recommendations based upon the results of this study for both the practical and academic fields.

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<sup>4</sup> Questionnaires as a data collection method were heavily 'promoted' at the target HEI during the early outbreak, with students receiving multiple different requests to participate per day presumably resulting in 'survey fatigue'.

### 9.3.1. IMPLICATIONS FOR PRACTICE

Although numerous (practical) counter-arguments – none of which are touched upon in this study – may give pause to any immediate push for transparency by HEI administrators, the one clear argument to be taken from the research data is that an institution which is perceived as transparent in its policies and decision-making goes a long way towards building trust in the relationship with their student population. Concerns over privacy in the student population do not have to be a cause for alarm as long as the HEI and its administrators are open and clear in their communication regarding privacy-related matters.

The relevance of the suggestion that increased information literacy diminishes the positive impact of perceived transparency on institutional trust is twofold: while at face value it may seem at odds with the interest of the institution to stimulate information literacy in its students as it would diminish positive effects of transparency, it could signify a more developed (nuanced) judgement made by the students on how relevant transparency is towards trustworthiness. This could lead HEI administrators to question whether the benefit to students is worth the potential for increased burden it puts on administrators through (e.g.) increased scrutiny from those students.

Regardless, any HEI administrator who wishes to pursue the use of advanced analytics to the benefit of their students and institution can consider increasing their own transparency in policymaking as a measure to build trust among students. They should just not expect students to open up solely based on that measure.

### 9.3.2. IMPLICATIONS FOR FURTHER RESEARCH

It would add to the limited literature on information practices in (higher) education to set up more intricate studies looking more closely at factors influencing the willingness to disclose – not unlike transparency and its effect on trust – to help HEI's make decisions on how to leverage the data of their students to an extent where it is palatable to all stakeholders involved. Transparency is but one of many institutional practices which may contribute to that.

Deeper insight in how 'perceived transparency' forms, and how it then impacts privacy-related decision-making processes (e.g. disclosure of personal information) would serve towards clarifying/explaining the so-called 'transparency paradox' (Nissenbaum, 2011) – when full transparency causes less transparency through information overload – as it may help to understand which elements of policy(-making) positively impact the perceived transparency rather than 'actual transparency'.

As Li et al. (2010) posited, privacy concern may be more contextual than the CFIP/IUIPC scales can effectively measure (Smith et al., 2011). This study regarded concerns over privacy-related matters in its 'general disposition' form, rather than in a more context-oriented 'transactional form' like the privacy calculus model (Dinev et al., 2013). Since there is enough reason to assume a more salient role for 'privacy' in decision-making processes pertaining personal data than this study would suggest, it may fit better to explore the transactional model for predictive modelling, as it would (a) make a resulting model more contextually viable and (b) would allow for more granular explanation on how policy measures influence disclosure behaviours than this study could achieve.

The measurement for disclosure behaviour in this study was largely aimed at the dichotomous nature of the decision (specifically, the likelihood of a subject opting in), but response behaviours typically are more complex and diverse than the somewhat oversimplified nature assumed for this study (i.e. dichotomous: opt in or opt out). In line with the earlier remarks on 'transactional' models, a study based on Regulatory Focus Theory would allow for more specific deliberations to be part of the predictive model (Wirtz & Lwin, 2009).

Although its significance was limited, the moderating effect of information literacy on the relationship between transparency and trust is in line with existing literature (Costante et al., 2015). Technical 'expertise' (a personal contextual factor) can allow an individual to put an organisation's actions towards transparency in the 'proper' context, thereby viewing the trustworthiness of the organisation in a different light than those without said contextual know-how. Therefore, while the direct impact of information literacy on trust may be limited, there is sufficient reason to further explore its role in privacy-related decision-making as a contextual moderator.

As is almost always the case, it is possible that even the highly significant results in this study are anomalies: unless this study is replicated with independent samples it should at the moment be considered no more than one of many possible models (Kline, 2011).

## 9.4. CONCLUSIONS

This thesis attempts to make sense of the impact (perceived) transparency by an HEI, and students' information management capabilities (information literacy) can have on their trust in the HEI and their general disposition towards privacy-related matters, and how those would then impact students' intentions towards disclosing their personal information for tracking and harvesting by their HEI. After the structural variables of the study and their directionality were used to construct a model, a survey was constructed taking established and well-validated measuring instruments to measure the hypothesised model.

Survey-data were analysed using PLS-SEM, supporting parts of the hypothesised research model while leaving some elements unsupported. The analysis primarily showed a strong significant relation with of perceived transparency with institutional trust, while only having a small indirect impact towards disclosure intentions. Results also suggested that while information literacy has limited direct impact on institutional trust, the effect of perceived transparency on institutional trust is (negatively) affected by increased information literacy. The results also supported prior assertions about the impact of institutional trust and privacy concern on disclosure intentions, while not supporting prior assertions about the relation between those two factors.

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## 11. APPENDIX 1: MEASUREMENT TABLE

Full table with all questionnaire measurements as described in the Technical Design (excl. control items).

Code	Indicators	Constructs							
		Privacy Concern	Institutional Trust	Perceived Transparency	Disclosure Intentions	Information Literacy			
PC11	Consumer online privacy is really a matter of a consumer's right to exercise control and autonomy over decisions about how their information is collected, used, and shared.	x							
PC12	Consumer control of personal information lies at the heart of consumer privacy.	x							
PC13	I believe that online privacy is invaded when control is lost or unwillingly reduced as a result of a marketing transaction.	x							
PC21	Organisations seeking information online should disclose the way the data are collected, processed, and used.	x							
PC22	A good consumer online privacy policy should have a clear and conspicuous disclosure.	x							
PC23	It is very important to me that I am aware and knowledgeable about how my personal information will be used.	x							
PC31	It usually bothers me when organisations ask me for personal information.	x							
PC32	When organisations ask me for personal information I sometimes think twice before providing it.	x							
PC33	It bothers me to give personal information to so many organisations.	x							
PC34	I am concerned that organisations are collecting too much personal information about me.	x							
IT11	I believe that [organisation] would act in my best interest.		x						
IT12	If I required help, [organisation] would do its best to help me.		x						
IT13	[organisation] is interested in my well-being, not just its own.		x						
IT21	[organisation] is truthful in its dealings with me.		x						
IT22	I would characterise [organisation] as honest.		x						
IT23	[organisation] would keep its commitments.		x						
IT31	[organisation] is competent and effective in providing education.		x						
IT32	[organisation] performs its role of providing education very well.		x						
IT33	Overall, [organisation] is a capable and proficient educational institution.		x						
IT34	In general, [organisation] is very knowledgeable on education.		x						

Code	Indicators	Constructs							
		Privacy Concern	Institutional Trust	Perceived Transparency	Disclosure Intentions	Information Literacy			
PT11	Complete information about the manner in which [organisation] makes decisions regarding the use of my personal information is available to me.			x					
PT12	All relevant policy plans and policy measures of [organisation] are available to me.			x					
PT13	Outcomes of policy implementations at [organisation] are made available along with all relevant qualitative and quantitative data.			x					
PT21	When [organisation] provides information on decisions it clearly reflects all values and opinions considered in the decision-making process.			x					
PT22	Information on policy decisions at [organisation] reflects both negative and positive issues related to their implementation.			x					
PT23	Effects of policy decisions at [organisation] are determined objectively, and there is room for dissenting opinions about the policy outcomes.			x					
PT31	The decision-making process at [organisation] is made insightful in a timely and understandable manner.			x					
PT32	Policy plans and measures at [organisation] are made insightful in a timely and understandable manner.			x					
PT33	Policy outcomes at [organisation] are made insightful in a timely and understandable manner.			x					
DI11	I am likely to allow [organisation] to track and harvest my online personal information and behaviour.				x				
DI12	I am willing to allow [organisation] to track and harvest my online personal information and behaviour.				x				
DI13	I will probably not allow [organisation] to track and harvest my online personal information and behaviour.				x				
IL11	I know how to solve my own technical problems.					x			
IL12	I can learn new technologies easily.					x			
IL13	I keep up with important new technologies.					x			
IL14	I know about a lot of different technologies.					x			
IL15	I have the technical skills I need to use IT for learning and to create 'artefacts' (e.g. presentations, reports, digital stories, blogs) which demonstrate my understanding of what I have learned.					x			
IL16	I have good IT skills.					x			
IL21	I am confident with my 'search and evaluate' skills in regard to finding information online.					x			
IL22	I am familiar with issues related to online activities like tracking, privacy, personalised search, etc.					x			
IL31	I frequently get help on my university work from friends online using (for example) WhatsApp, Skype, Facebook, or Reddit.					x			
IL32	IT enables me to collaborate better with my peers on project work and other learning activities.					x			



## 12. APPENDIX 2: LOADINGS & CROSS-LOADINGS

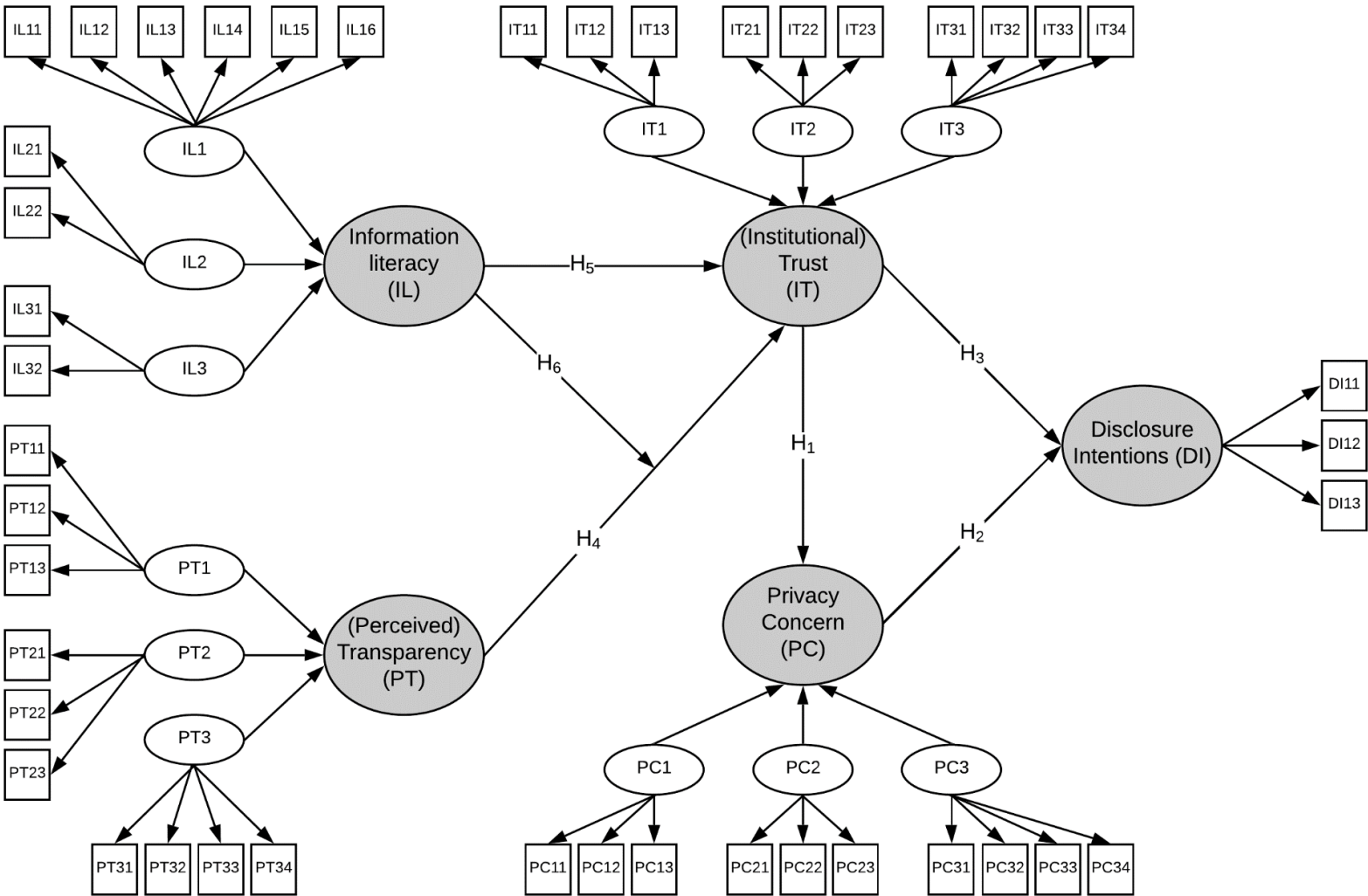
Indicator	IL1	IL2	IL3	PT1	PT2	PT3	IT1	IT2	IT3	PC1	PC2	PC3	DI
IL11	<b>0.8159</b>	0.2830	0.3948	0.0295	0.0770	0.0638	0.0311	0.0405	0.0369	0.0494	0.0700	-0.0828	0.1010
IL12	<b>0.8301</b>	0.3295	0.3371	0.0716	0.1147	0.0771	0.1048	0.0935	0.1637	0.3207	0.2739	-0.0145	0.1269
IL13	<b>0.8732</b>	0.4084	0.4241	0.2199	0.1435	0.1232	-0.0898	-0.1457	0.1166	0.2209	0.2555	-0.0068	0.1691
IL14	<b>0.8741</b>	0.4012	0.5237	0.2846	0.2439	0.1307	0.0139	-0.0290	0.1436	0.0593	0.1853	-0.1215	0.1805
IL15	<b>0.7709</b>	0.2983	0.1617	0.0481	0.0592	-0.0110	-0.0301	-0.1596	0.1614	0.0591	0.1559	-0.1970	0.2920
IL16	<b>0.8891</b>	0.3249	0.3663	0.1661	0.1415	-0.0031	-0.0779	-0.1505	0.1302	0.0398	0.0871	-0.2187	0.2406
IL21	0.2834	<b>0.8244</b>	0.1236	0.0101	0.0679	0.2244	-0.1169	0.0164	0.2576	0.0475	0.2012	-0.0838	0.2149
IL22	0.4039	<b>0.8827</b>	0.1839	0.0743	0.1276	0.1777	-0.0565	-0.0890	0.1979	-0.0145	0.1715	0.0442	0.1472
IL31	0.2001	0.1075	<b>0.5215</b>	0.2091	0.2290	0.1534	0.0497	-0.0954	0.0023	-0.0078	0.0938	-0.1746	-0.1353
IL32	0.4110	0.1528	<b>0.8736</b>	0.1823	0.1878	0.2340	-0.0154	-0.0283	0.0995	0.1428	-0.1229	-0.0192	0.1253
PT11	0.1521	0.0721	0.2542	<b>0.9083</b>	0.5872	0.5219	0.1707	0.1706	0.0248	-0.2003	-0.0117	-0.0686	0.1522
PT12	0.1851	0.0276	0.2469	<b>0.9256</b>	0.6207	0.5410	0.2180	0.1728	0.1408	-0.1040	0.0016	-0.0009	0.1643
PT13	0.1372	0.0472	0.2107	<b>0.9227</b>	0.6329	0.6174	0.1800	0.1746	0.0739	-0.1730	-0.0725	0.0010	0.0927
PT21	0.1562	0.1290	0.2474	0.6316	<b>0.8470</b>	0.6758	0.4057	0.4040	0.3667	-0.0193	-0.0201	0.0119	0.2261
PT22	0.1794	0.0805	0.2770	0.5816	<b>0.9045</b>	0.5153	0.1629	0.2292	0.2044	-0.0450	-0.0872	-0.1230	0.2671
PT23	0.0679	0.0881	0.1680	0.4945	<b>0.8273</b>	0.4421	0.1497	0.2693	0.1714	0.0112	-0.0581	-0.0122	0.1518
PT31	0.1647	0.2594	0.2214	0.4394	0.5529	<b>0.8474</b>	0.4176	0.3846	0.4146	-0.0038	0.0503	-0.0044	0.3243
PT32	0.0729	0.2221	0.3008	0.5879	0.6546	<b>0.9155</b>	0.3982	0.3124	0.3681	-0.1083	-0.0112	-0.0511	0.2906
PT33	-0.0210	0.1329	0.1973	0.5779	0.4868	<b>0.8747</b>	0.3964	0.3228	0.4714	-0.1043	-0.0161	0.0736	0.2504
IT11	-0.0079	0.0960	0.0741	0.3073	0.3101	0.4532	<b>0.7714</b>	0.4721	0.3077	0.1954	0.0825	0.2256	0.0251
IT12	-0.0281	-0.1565	0.0075	0.1940	0.2620	0.4303	<b>0.8993</b>	0.6557	0.5223	0.0303	0.0309	-0.0661	0.2301
IT13	0.0113	-0.1639	-0.0470	0.0357	0.1744	0.2864	<b>0.8649</b>	0.6412	0.3895	0.1836	0.1584	0.0546	0.1039
IT21	-0.1381	-0.1899	-0.0664	0.1776	0.2838	0.3026	0.6138	<b>0.8548</b>	0.1692	0.1495	0.0625	0.2248	0.1020
IT22	-0.0189	0.0412	-0.0629	0.2148	0.3396	0.3955	0.6829	<b>0.9119</b>	0.3708	0.2783	0.1767	0.2261	0.1347
IT23	-0.0322	0.0009	-0.0569	0.0969	0.3103	0.3045	0.5417	<b>0.8608</b>	0.4054	0.0422	0.1360	0.0972	0.2387
IT31	0.1505	0.2775	0.1307	0.0259	0.2068	0.4330	0.4060	0.2830	<b>0.9018</b>	0.1213	0.2826	-0.0070	0.1076
IT32	0.0994	0.2834	0.1087	0.1000	0.2982	0.4636	0.5281	0.3875	<b>0.9119</b>	0.0780	0.1423	0.0542	0.1999
IT33	0.1794	0.2670	0.0372	-0.0247	0.1869	0.3198	0.3389	0.2972	<b>0.9332</b>	0.2301	0.3239	0.0687	0.2384
IT34	0.1150	0.1335	0.0366	0.1980	0.3697	0.4882	0.4774	0.3481	<b>0.8873</b>	0.1361	0.2934	-0.0120	0.2463

Trust through transparency: WILL IT GET YOU WHAT YOU WANT?										46			
PC11	-0.0043	0.0137	0.1308	-0.1951	-0.0476	-0.1859	-0.0719	0.0020	-0.0425	<b>0.7551</b>	0.1686	0.2301	-0.0892
PC12	-0.0391	-0.0641	0.1016	-0.0443	0.1176	0.0893	0.4407	0.3446	0.2614	<b>0.6334</b>	0.1580	0.0815	0.0358
PC13	0.2833	0.0567	0.0502	-0.1334	-0.0757	-0.0687	0.0481	0.1072	0.1344	<b>0.8092</b>	0.2887	0.4526	-0.1799
PC21	0.1693	0.2354	0.0270	-0.2535	-0.1627	-0.0968	-0.1466	-0.1014	0.0725	0.1865	<b>0.7057</b>	0.2267	-0.0742
PC22	0.2223	0.2878	0.0211	0.0860	-0.0218	0.0972	-0.0048	0.1433	0.2402	0.1211	<b>0.8010</b>	0.1399	-0.0812
PC23	0.0502	-0.0391	-0.1499	0.0802	0.0383	0.0115	0.3186	0.2337	0.2603	0.2830	<b>0.5874</b>	0.2908	-0.1330
PC31	-0.2852	-0.1211	-0.0956	0.0273	-0.0761	-0.0097	-0.0313	0.1741	-0.1379	0.1461	0.2474	<b>0.7427</b>	-0.1912
PC32	-0.0765	0.0538	-0.0593	0.0151	0.0539	-0.0071	-0.0005	0.1864	-0.0293	0.3213	0.2364	<b>0.8362</b>	-0.2907
PC33	-0.1423	-0.0461	-0.1095	0.0015	-0.0481	0.0369	0.0333	0.1703	-0.0176	0.3939	0.1931	<b>0.8866</b>	-0.2534
PC34	0.0706	0.0392	-0.0621	-0.1085	-0.0837	-0.0078	0.2080	0.1397	0.2382	0.3316	0.3529	<b>0.7180</b>	-0.2750
DI11	0.1939	0.2176	0.0207	0.1224	0.2796	0.3613	0.1850	0.2187	0.2543	-0.0946	-0.0721	-0.2789	<b>0.9587</b>
DI12	0.1675	0.1932	0.0407	0.1749	0.2695	0.3301	0.1311	0.2057	0.2059	-0.1364	-0.1779	-0.3254	<b>0.9694</b>
DI13	0.2663	0.1873	0.0575	0.1216	0.1722	0.2438	0.1134	0.0872	0.1713	-0.1365	-0.1542	-0.3152	<b>0.9471</b>

13. APPENDIX 3: MEASUREMENT MODEL (INNER/OUTER)

This is the full measurement model including all items for the indicator constructs. The grey elements and the arrows between them are the inner model (i.e. the structural

research model), all elements feeding (directly and indirectly) into those 5 elements make up the outer model.





## 14. APPENDIX 4: QUESTIONNAIRE

The following pages contain a (redacted) version of the survey as presented to respondents.

Thank you for your willingness to contribute to this study, which is conducted in part to help me attain [REDACTED].

Furthermore, it is also aiming to contribute to writing policies regarding the use of personal information in higher education. The answers should reflect your personal ideas, impressions and opinions.

This survey was designed for students at [REDACTED].

If you are not currently enrolled at [REDACTED] or if you are not a student then your willingness to contribute is appreciated, but please close this survey.

A1. What is your gender?

Female ☐

Male ☐

Prefer not to answer ☐

Prefer to self-describe: ☐

Prefer to self-describe:

A2. What is your age?

< 18 years old ☐

18 - 21 years old ☐

22 - 25 years old ☐

> 25 years old ☐

Prefer not to answer ☐

**A3. Which of the following answers applies to your nationality?**

Dutch nationality ☐

Non-Dutch, EU citizen ☐

Non-Dutch, non-EU citizen ☐

Prefer not to answer ☐

**B1. The following statements are related to your general ideas on personal privacy and your opinion on how organisations should handle your personal information. Please select the extent to which you agree with the statement on a scale from 1-Strongly disagree to 7-Strongly Agree.**

	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
Consumer online privacy is really a matter of a consumer's right to exercise control and autonomy over decisions about how their information is collected, used, and shared.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consumer control of personal information lies at the heart of consumer privacy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe that online privacy is invaded when control is lost or unwillingly reduced as a result of a marketing transaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**B2. The following statements are related to your general ideas on personal privacy and your opinion on how organisations should handle your personal information. Please select the extent to which you agree with the statement on a scale from 1-Strongly disagree to 7-Strongly Agree.**

	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
Organisations seeking information online should disclose the way the data are collected, processed, and used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A good consumer online privacy policy should have a clear and easy-to-find disclosure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is very important to me that I am aware and knowledgeable about how my personal information will be used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**B3. The following statements are related to your general ideas on personal privacy and your opinion on how organisations should handle your personal information. Please select the extent to which you agree with the statement on a scale from 1-Strongly disagree to 7-Strongly Agree.**

	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
It usually bothers me when organisations ask me for personal information.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When organisations ask me for personal information I sometimes think twice before providing it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It bothers me to give personal information to so many organisations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
I am concerned that organisations are collecting too much personal information about me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C1. The following statements are related to your general impression of [redacted]. Please select the extent to which you agree with the statement on a scale from 1-Strongly disagree to 7-Strongly Agree.</b>							
	1- Strongly disagree	2- Moderately disagree	3- Slightly disagree	4- Neither agree nor disagree	5- Slightly agree	6- Moderately agree	7- Strongly agree
I believe that [redacted] would act in my best interest.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If I required help, [redacted] would do its best to help me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
[redacted] is interested in my well-being, not just its own.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C2. The following statements are related to your general impression of BUAs. Please select the extent to which you agree with the statement on a scale from 1-Strongly disagree to 7-Strongly Agree.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
[redacted] is truthful in its dealings with me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would characterise [redacted] as honest.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
[redacted] would keep its commitments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C3. The following statements are related to your general impression of BUAs' attitude towards you individually as a student. Please select the extent to which you agree with the statement on a scale from 1-Strongly disagree to 7-Strongly Agree.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree
[redacted] is competent and effective in providing education.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
[redacted] performs its role of providing education very well.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall, [redacted] is a capable and proficient educational institution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In general, [redacted] is very knowledgeable on education.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>D1. The following statements are related to your use of information technology. Please select the extent to which you agree with the statement on a scale from 1-Strongly disagree to 7-Strongly Agree.</b>							
	1- Strongly disagree	2- Moderately disagree	3- Slightly disagree	4- Neither agree nor disagree	5- Slightly agree	6- Moderately agree	7- Strongly agree
I know how to solve my own technical problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can learn new technologies easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



	1- Strongly disagree	2- Moderately disagree	3- Slightly disagree	4- Neither agree nor disagree	5- Slightly agree	6- Moderately agree	7- Strongly agree
I keep up with important new technologies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know about a lot of different technologies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have the technical skills I need to use IT for learning and to create 'artefacts' (e.g. presentations, reports, digital stories, blogs) which demonstrate my understanding of what I have learned.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have good IT skills.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**D2. The following statements are related to your use of information technology. Please select the extent to which you agree with the statement on a scale from 1-Strongly disagree to 7-Strongly Agree.**

	1- Strongly disagree	2- Moderately disagree	3- Slightly disagree	4- Neither agree nor disagree	5- Slightly agree	6- Moderately agree	7- Strongly agree
I am confident with my 'search and evaluate' skills in regards to finding information online.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am familiar with issues related to online activities like tracking, privacy, personalised search, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**D3. The following statements are related to your use of information technology. Please select the extent to which you agree with the statement on a scale from 1-Strongly disagree to 7-Strongly Agree.**

	1- Strongly disagree	2- Moderately disagree	3- Slightly disagree	4- Neither agree nor disagree	5- Slightly agree	6- Moderately agree	7- Strongly agree
I frequently get help on my university work from friends online using (for example) WhatsApp, Skype, Facebook, or Reddit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IT enables me to collaborate better with my peers on project work and other learning activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**E1. The following statements are related to your impression on how [redacted] communicates its privacy policies to you as a student. Please select the extent to which you agree with the statement on a scale from 1-Strongly disagree to 7-Strongly Agree.**

	1- Strongly disagree	2- Moderately disagree	3- Slightly disagree	4- Neither agree nor disagree	5- Slightly agree	6- Moderately agree	7- Strongly agree
Complete information about the manner in which [redacted] makes decisions regarding the use of my personal information is available to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All relevant policy plans and policy measures of [redacted] are available to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outcomes of policy implementations at [redacted] are made available along with all relevant qualitative and quantitative data.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**E2.** The following statements are related to your impression on how [redacted] communicates its privacy policies to you as a student. Please select the extent to which you agree with the statement on a scale from *1-Strongly disagree to 7-Strongly Agree*.


	1- Strongly disagree	2- Moderately disagree	3- Slightly disagree	4- Neither agree nor disagree	5- Slightly agree	6- Moderately agree	7- Strongly agree
When [redacted] provides information on decisions it clearly reflects all values and opinions considered in the decision-making process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information on policy decisions at [redacted] reflects both negative and positive issues related to their implementation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Effects of policy decisions at [redacted] are determined objectively, and there is room for dissenting opinions about the policy outcomes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

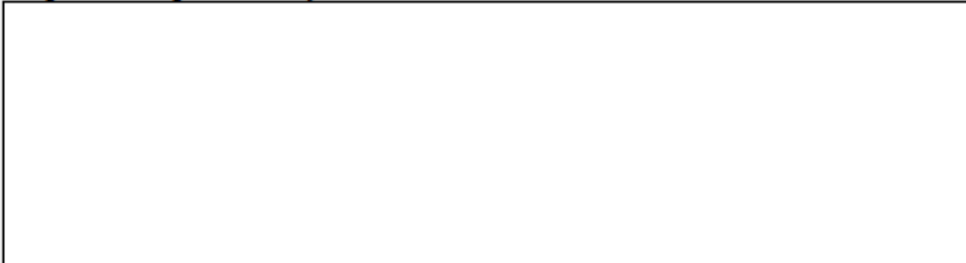
**E3.** The following statements are related to your impression on how [redacted] communicates its privacy policies to you as a student. Please select the extent to which you agree with the statement on a scale from *1-Strongly disagree to 7-Strongly Agree*.


	1- Strongly disagree	2- Moderately disagree	3- Slightly disagree	4- Neither agree nor disagree	5- Slightly agree	6- Moderately agree	7- Strongly agree
The decision-making process at [redacted] is made insightful in a timely and understandable manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy plans and measures at [redacted] are made insightful in a timely and understandable manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy outcomes at [redacted] are made insightful in a timely and understandable manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>


**F1.** The following statements are related to data about your learning activities at [redacted]. Please select the extent to which you agree with the statement on a scale from *1-Strongly disagree to 7-Strongly Agree*.

	1- Strongly disagree	2- Moderately disagree	3- Slightly disagree	4- Neither agree nor disagree	5- Slightly agree	6- Moderately agree	7- Strongly agree
I am likely to allow [redacted] to track and harvest my online personal information and behaviour.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am willing to allow [redacted] to track and harvest my online personal information and behaviour.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I will probably not allow [redacted] to track and harvest my online personal information and behaviour.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

G1.  If you have any additional remarks regarding the survey itself, or any other type of feedback - whether positive or negative - feel free to leave it below. Feedback or critique is always appreciated and will help me to improve on my research methods.



Thank you for taking the time to answer the questions in this study. Your answers will contribute to developing ways to better manage and protect the your personal privacy at .

If you are interested in the results of the study, or have questions related to it, then feel free to contact me via .

With kind regards,

